Dr. Ernest William Goodpasture has been appointed assistant professor of pathology at the Harvard Medical School.

Mr. R. S. Troup, assistant inspector-general of forests, India, has been elected professor of forestry at Oxford.

At the University of Lyons, Dr. Mouriquand has been appointed professor of general pathology and therapeutics in place of Professor Lesieur, deceased, and Dr. Policard has been appointed professor of general anatomy and histology in place of Professor Renaut, who has retired from active service.

DISCUSSION AND CORRESPONDENCE

AN UNUSUAL FORM OF RAINBOW

The following is an account of a rainbow which, although probably simple enough in theory, was entirely new to the writer and seems to be worthy of record. The refracting spheres were neither falling raindrops nor drops suspended in air. They were drops resting on the surface of a lake but kept from breaking through the lake surface by a surface tension effect. They probably resulted from a fog which had hung over the lake during the night and persisted longer than usual after sunrise. The morning was unusually calm, and no ripples had yet appeared on the lake. The floating drops gave the surface an appearance like that caused by a scum, but close examination showed the individual drops quite distinctly and also showed that the light of the bow undoubtedly came from them, for part of the bow came quite close to the observer.

The bow was seen about nine o'clock according to the daylight-saving bill, or eight by the usual local railroad time. Its appearance was about as shown in the accompanying figure. AB is the western shore-line of the lake, about 200 yards away. The bow was complete except in the following particulars: the part near S was hidden by the shadow of the observer and that of the boat in which he sat; and the part PRQ was inverted, like a reflection of what should have been the crest, the part near R being somewhat less bright than the rest. The ends of this inverted portion seemed to meet the ends of the larger arc at the shore-line, but there is no reason why such an accidental line should determine the intersection of the two

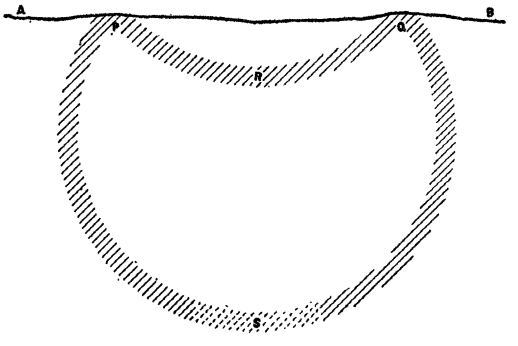

Fig. 1.

branches. Probably they should meet at the horizon. Owing to the closeness of the observer's eye to the water-level, and the distance of the shore-line, the latter would differ in angular position very slightly from the true horizon. Though the bow was very brilliant, no trace of a second bow was visible.

The obvious explanation of the inverted portion is that it is formed by reflection in the lake surface, either directly before or directly after the light passes through the drop. If the light enters the top of the drop and is afterward reflected from the lake-surface, the reflected ray will clear the drop if the elevation of the sun is greater than 21°.6. If it is first reflected from the lake and then enters the drop at the angle of incidence proper to give rise to minimum deviation, the sun's elevation must be less than 20°.4 in order for the incident ray to clear the drop. These figures are calculated on the assumptions that the drop is spherical, that it rests on the surface, and that the angle of the bow is that given by the elementary rainbow theory.

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A SIMPLE DEVICE FOR ILLUSTRATING OSMOSIS

The difficulty of preparing a "leak-proof" apparatus to demonstrate osmosis by the use of parchment and thistle tube, led me, last